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CP-1 Archaeological Survey

SD 415 64 69

cl

October 21, 1991

SDMS DOCID # 1148153

John M. O'Brien, Mining Engineer
Tuba City Field Office
Navajo Abandoned Mine Land Reclamation Department
P.O. Box 308
Window Rock, AZ 86515

RE: Cameron, Proposed Reclamation of Six Uranium Mines, Navajo Nation
and DOI-BIA/NAO

Dear Mr. O'Brien:

Thank you for consulting with us about the above project and sending us copies of the archaeological survey report prepared by Phil Geib and Miranda Warburton from the Navajo Nation Archaeology Department. I have reviewed your submittal and have the following comments pursuant to 36 CFR Part 800:


1. I note that the survey of the project area located six historic sites known as AZ-K-60-3, AZ-N-5-1, AZ-N-5-2, AZ-N-5-3, AZ-N-11-1 and AZ-N-11-2. All six sites are abandoned uranium mines dating between the 1950s and the 1960s.

2. Based on the the information provided, it is our opinion that none of the sites are eligible for inclusion in the National Register of Historic Places because they fail to meet the 50 year guideline for eligibility. Since no other cultural resources were found, it appears that the project should have no effect on any National Register or eligible properties.

3. I note that you submitted this report to the Navajo Nation Historic Preservation Department (NNHPD). NNHPD will have to comment on this project and our comments are preliminary pending approval from NNHPD. However, if NNHPD concurs with our assessments of eligibility and effect, we do not need to be consulted again.

We appreciate your contacting us and considering the impacts of planned projects on historic preservation. If you have any questions, please contact me.

Sincerely,


Robert E. Gasser
Compliance Coordinator

for Shereen Lerner, Ph.D.
State Historic Preservation Officer

cc: Alan Downer, NNHPD

Navajo Nation Archaeology Department Report No. 91-17

AN ARCHAEOLOGICAL SURVEY FOR THE PROPOSED RECLAMATION
OF SIX ABANDONED URANIUM MINES AROUND CAMERON, COCONINO COUNTY, ARIZONA

(NNAD-91-17)
(CAMERON AML PROJECT 1)

by

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August 1991



Abstract

1. AGENCY: Navajo Nation Historic Preservation Department
2. PROJECT TITLE: An Archaeological Survey for the Proposed Reclamation of Six Abandoned Uranium Mines Around Cameron, Coconino County, Arizona.
3. PROJECT NUMBER: NNAD-91-17 (Cameron AML Project 1)
4. PROJECT DESCRIPTION: AMLRD proposes to reclaim six project areas identified by them as hazards to public health and safety. These proposed reclamation areas contain open mine pits up to 50 feet deep, associated waste rock, and small piles of protore. Heavy equipment (bulldozers, scrapers, etc.) will be used to put the protore and waste rock back into mine pits at each of the six project areas.
5. LOCATION: The project area is in the vicinity of Cameron, Coconino County, Arizona in the Bodaway and Coal Mine Mesa Chapters of the Tuba City Agency. All of the areas are located on Navajo Tribal Trust land. The general region has not been included in a government survey, but the projected townships and ranges are T28-32N, R9-10E, Gila and Salt River meridian. USGS 7.5 minute maps are Cameron North, Ariz, 1988 Provisional Edition, Cameron SE, Ariz, 1988 provisional edition, and Shadow Mountain Well, Ariz 1982.
6. NUMBER OF SURVEYED ACRES:
7. NUMBER OF SITES: Six Historic Sites
8. NUMBER OF ELIGIBLE SITES: None
9. LISTING ELIGIBLE SITES: N/A
10. COMMENTS: None

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INTRODUCTION

In the western part of the Painted Desert on Navajo Tribal Land around Cameron, Coconino County, Arizona (Figure 1), there is an extensive area of scattered uranium deposits in the lower members of the Chinle Formation (Figures 2, 3a, and 3b). The uranium deposits of this area were prospected and mined during the 'uranium boom' of the 1950s and early 1960s. Rather intensive ore exploration and exploitation has left a legacy of landscape scars, radioactive protore (low grade ore, stock-piled for future use) piles, and potentially dangerous ponds. Open mining pits, some several acres in size, dot the barren landscape of the Painted Desert north and east of Cameron. Water impounded in some of the pits creates murky pools used by livestock for drinking and at times by local children for swimming. Contamination of groundwater or the Little Colorado River by radioactive minerals poses an undetermined environmental risk. In an effort to mitigate real and potential health and safety hazards, and abate the most severe and extensive surface disturbances, the Abandoned Mine Lands Reclamation Department (AMLRD), Navajo Nation Division of Natural Resources, is proposing to reclaim many of the old uranium mines in the Cameron area. The first phase of this project involves the reclamation of six mine sites; other sites will be reclaimed as funds become available. As part of its effort to comply with federal and tribal legislation, AMLRD requested that the Navajo Nation Archaeology Department (NNAD) conduct an archaeological survey of the 6 project areas prior to initiating any ground disturbing activity.

The archaeological survey was conducted by Miranda Warburton and Phil Geib of NNAD's Northern Arizona University Branch Office (NNAD-NAU) on May 13 and 14, 1991. In addition to the archaeological survey, several individuals were interviewed about their participation in, or knowledge of, mining

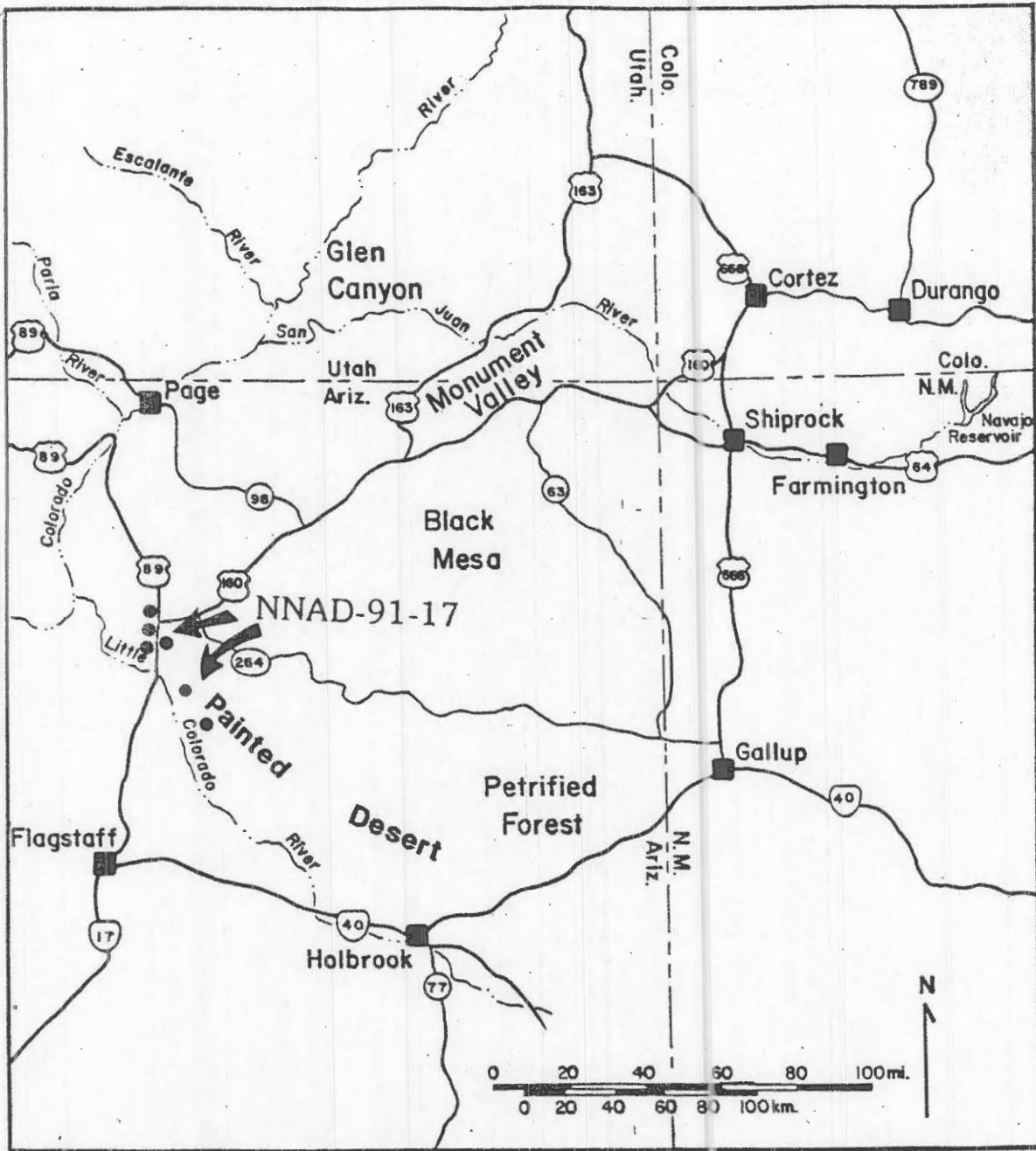


Figure 1. General Location of NNAD-91-17.

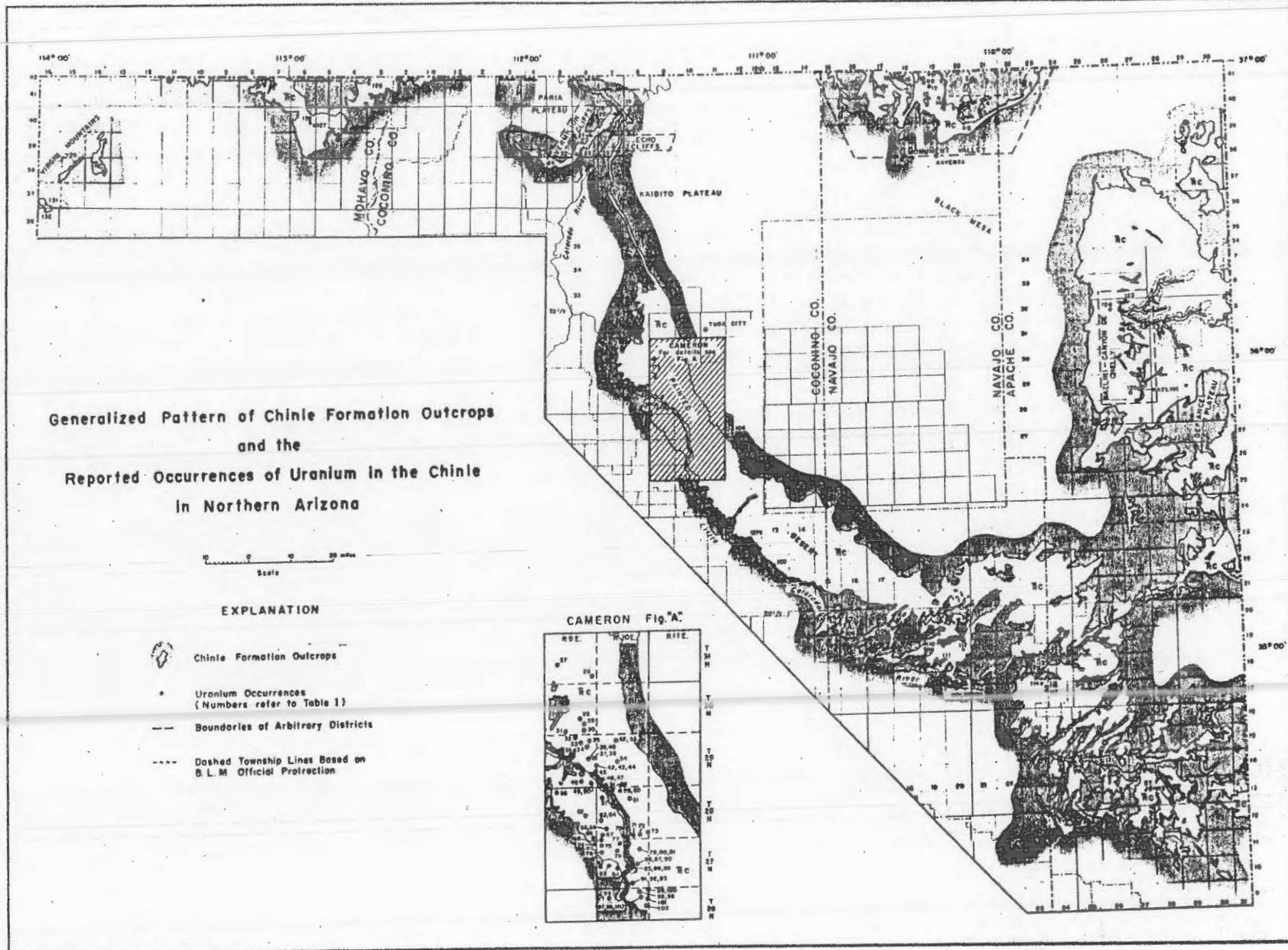
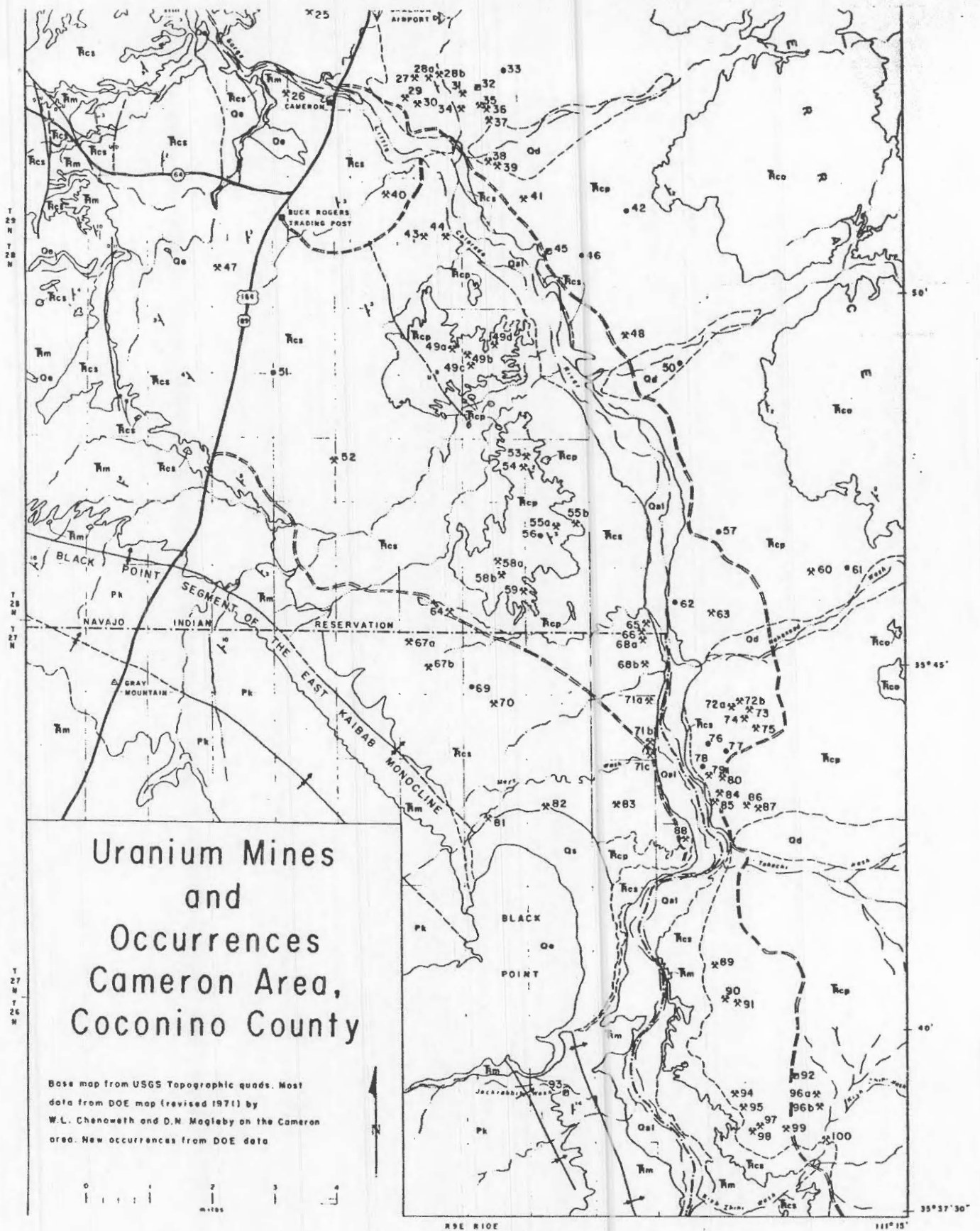


Figure 2. Geologic Map Illustrating Uranium Occurrences in the Cameron, Arizona Region.



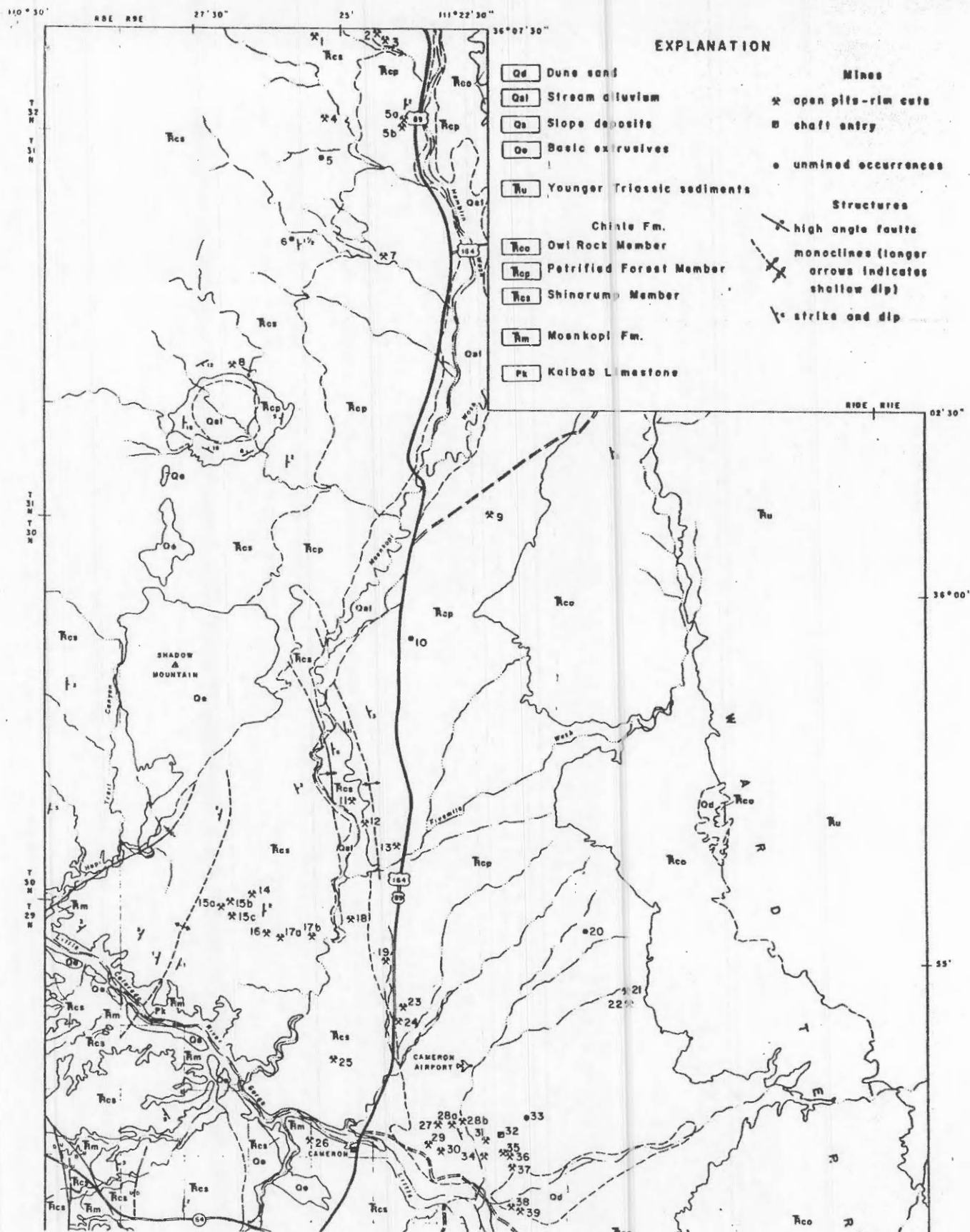


Figure 3b. Topographic Map Illustrating the Location of Uranium Mines and Occurrences in the Cameron, Ariz. Region (Based on Cameron, Ariz. 15' Quad).

operations at Cameron. This ethnohistorical inquiry was conducted by Grace Morgan-Long of NNAD-NAU. John O'Brien, AMLRD Mining Engineer, took Geib on a preliminary inspection of the six project areas in late April, 1991. AMLRD funded this study and provided detailed topographic maps for several project areas and some historic documentation.

PROJECT DESCRIPTION

AMLRD proposes to reclaim six project areas identified by them as hazards to public health and safety. These proposed reclamation areas contain open mine pits up to 50 feet deep, associated waste rock, and small piles of protore. Heavy equipment (bulldozers, scrapers, etc.) will be used to put the protore and waste rock back into mine pits at each of the six project areas. All project areas are accessed by existing roads that require no improvement.

The six project areas (PAs) of the proposed Cameron reclamation program are listed in Table 1 while Figures 4a, 4b, 4c and 4d show the specific location of these areas on USGS topographic quadrangles. The size of these project areas varies from 6.0 to 31.9 acres, and the total area of effect for the reclamation areas is 100.7 acres (40.8 hectares). This acreage figure is based on AMLRD calculations.

LOCATION

The six project areas (PAs) of the Cameron reclamation program are located in the Bodaway and Coal Mine Mesa Chapters, Tuba City Agency, of the Navajo Nation, Coconino County, Arizona (Figures 1 and 2). All of the areas are located on Navajo Tribal Trust land.

The general region has not been included in a government survey, but the projected townships and ranges are T28-32N, R9-10E, Gila and Salt River

Table 1. Size, NNAD site number, and UTM Coordinates (Zone 12) for the six AMLRD Project (NNAD-91-17).

AMLRD Area	Project Area Name	Size (acres)	UTM Coordinates		
5a&b	Henry Sloan No.1 (NNAD-AZ-K-60-3)	7.3	A:Cent	3995520N	464220E
			CP1	3995410N	464160E
			CP2	3995520N	464110E
			CP3	3995590N	464180E
			CP4	3995610N	464290E
			CP5	3995450N	464290E
			B:Cent	3995250N	464220E
			CP1	3995210N	464210E
			CP2	3995260N	464170E
			CP3	3995300N	464190E
13	Jeepster No.1 (NNAD-AZ-N-5-1)	18.2	Cent	3977490N	463890E
			CP1	3977240N	463860E
			CP2	3977400N	463810E
			CP3	3977670N	463830E
			CP4	3977720N	463980E
			CP5	3977420N	463950E
			CP6	3977390N	463980E
			CP7	3977300N	463970E
23	Charles Huskon No. 19 (NNAD-AZ-N-5-2)	8.3	Cent	3973710N	464140E
			CP1	3973640N	464040E
			CP2	3973840N	464040E
			CP3	3973720N	464260E
			CP4	3973610N	464240E
25	Charles Huskon No. 12 (NNAD-AZ-N-5-3)	6.0	Cent	3971900N	462250E
			CP1	3971800N	462200E
			CP2	3971940N	462160E
			CP3	3972040N	462310E
			CP4	3971880N	462340E
41	Juan Horse No. 4 (NNAD-AZ-N-11-1)	29.0	Cent	3964270N	469980E
			CP1	3964060N	469820E
			CP2	3964320N	469800E
			CP3	3967440N	469860E
			CP4	3964480N	470000E
			CP5	3964340N	470180E
			CP6	3964130N	470150E
48	Jack Huskon No. 3 (NNAD-AZ-N-11-2)	31.9	Cent	3967730N	467500E
			CP1	3967530N	467310E
			CP2	3967670N	467210E
			CP3	3967910N	467470E
			CP4	3967840N	467760E
			CP5	3967660N	467680E

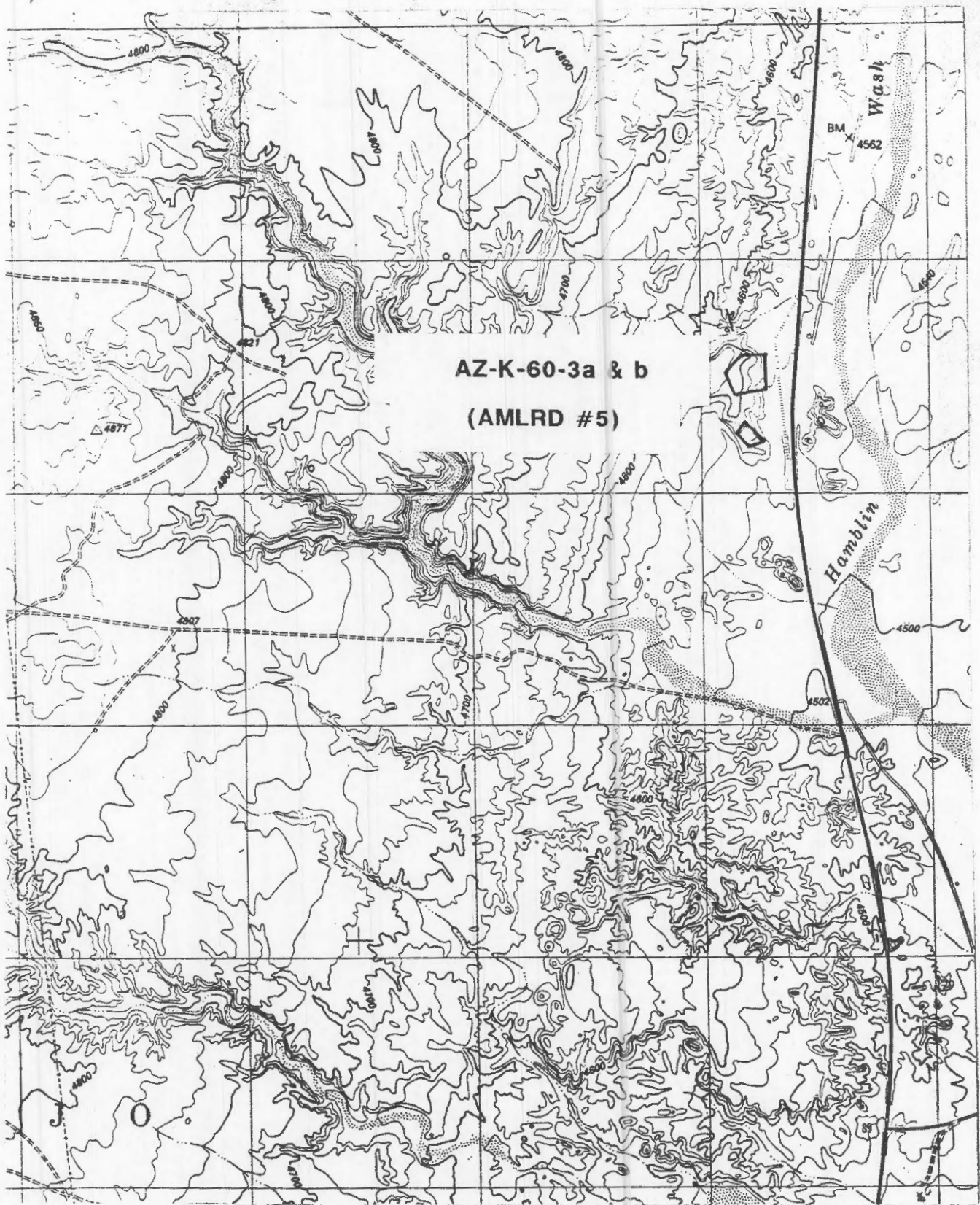


Figure 4a. USGS 7.5' Shadow Mtn Well, Ariz. 1982 Showing Location of NNAD AZ-K-60-3a & b, (AMLRD Project Area 5).

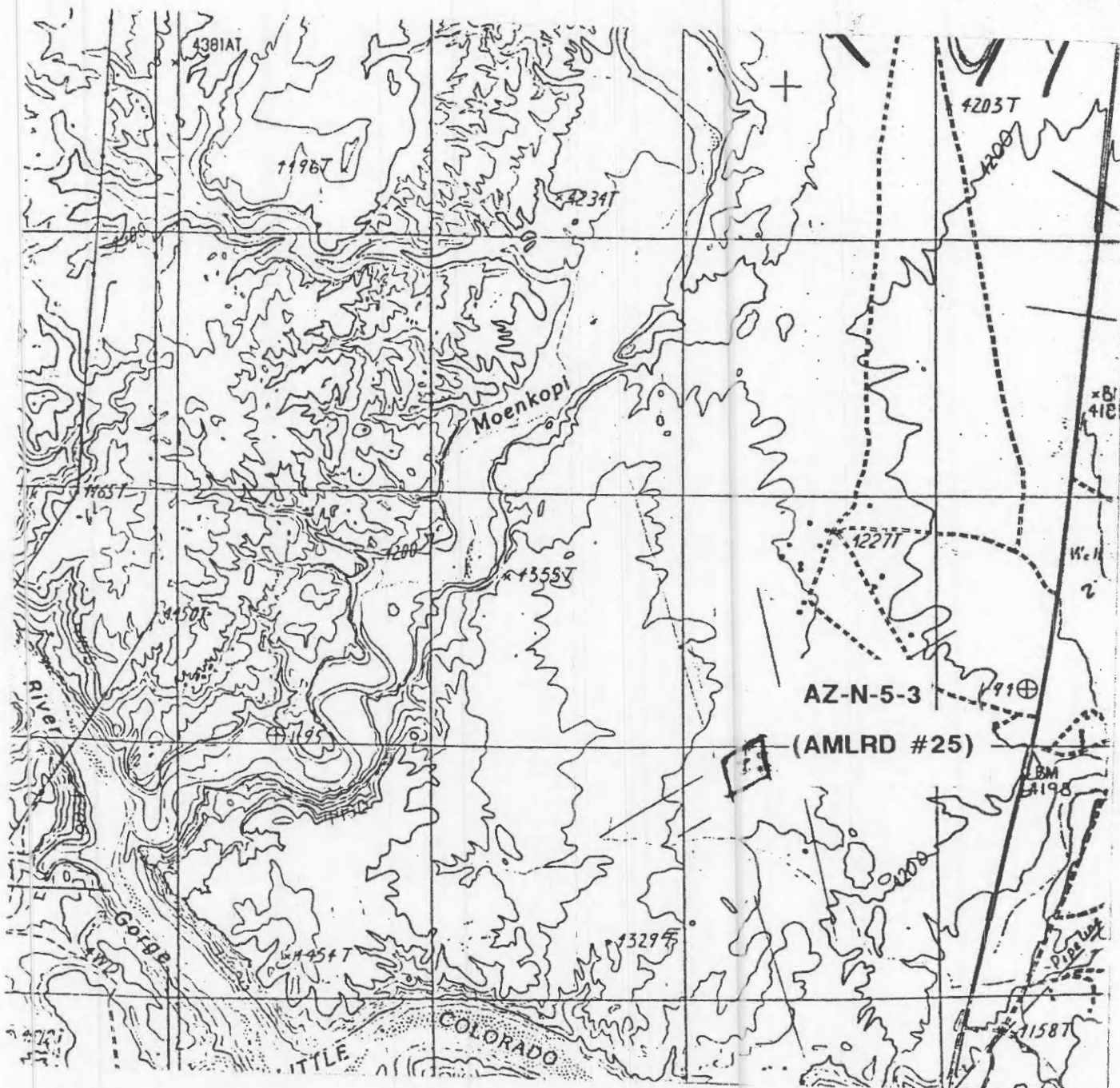


Figure 4c. USGS 7.5' Cameron, Ariz. 1988 Provisional Edition Showing Location of NNAD AZ-N-5-3 (AMLRD #25).

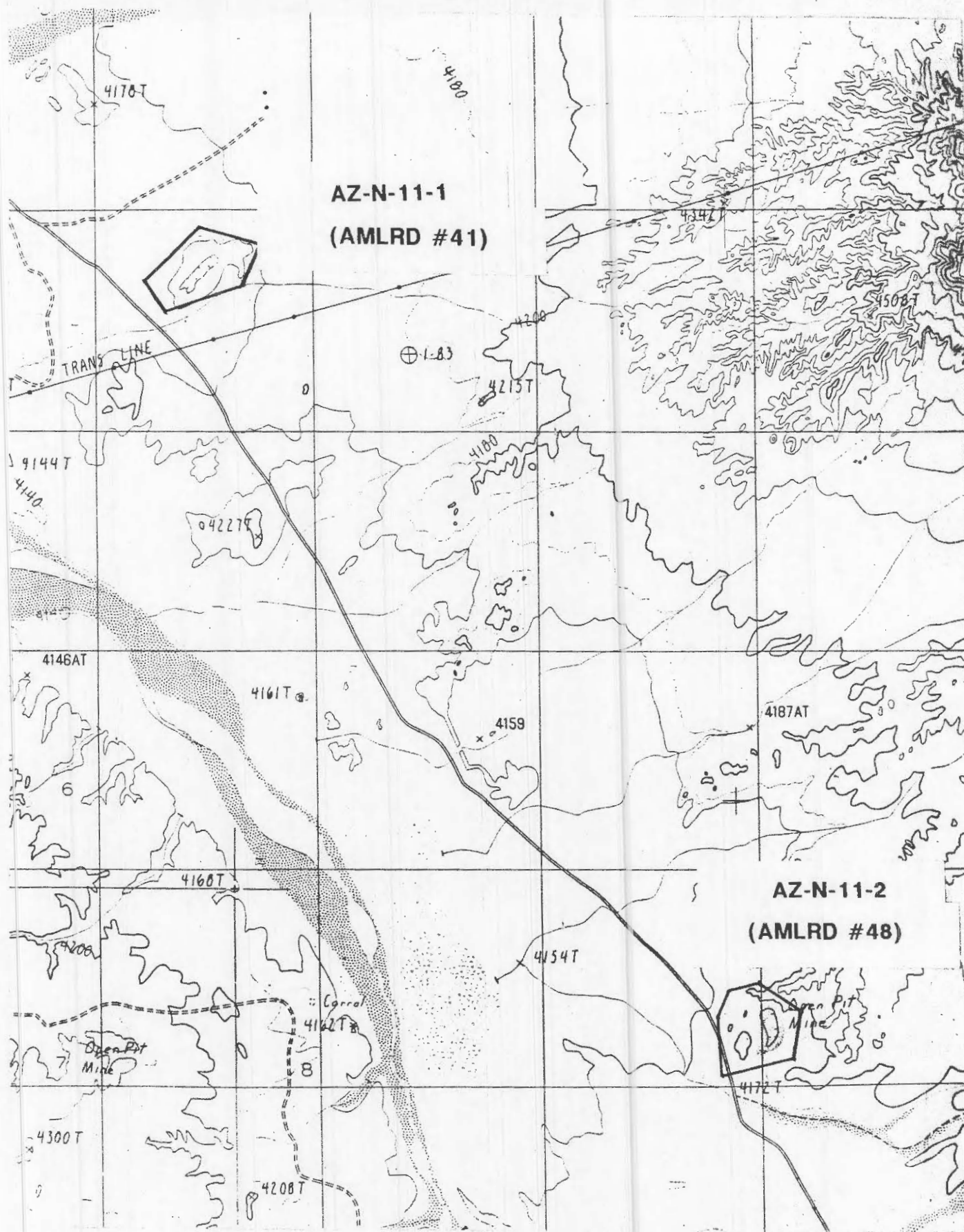


Figure 4d. USGS 7.5 Cameron SE, Ariz. 1988 Provisional Edition Showing Location of NNAD AZ-N-11-1, and AZ-N-11-2 (AMLRD Project Areas 41, 48).

meridian. Specific locations of the project areas are shown in Figures 4a-4d on USGS 7.5 minute topographic quadrangles *Cameron North, Arizona*, 1988 provisional edition *Cameron SE, Arizona*, 1988 provisional edition, and *Shadow Mountain Well, Arizona*, 1982. Table 1 gives the UTM coordinates for the corner points (CPs) and approximate centers of the project areas.

ENVIRONMENTAL AND CULTURAL SETTING

The Painted Desert is essentially a vast expanse of colorful Triassic Period silt- and mudstone intricately dissected and eroded to form badlands and low scarps. The Painted Desert extends along the Little Colorado River from Holbrook north and west to Tuba City. The Chinle Formation is the principal geologic unit exposed in the Painted Desert, and it is from this formation that uranium was mined. The Painted Desert extends in a broad arc across the southwestern portion of the Navajo Reservation, from The Gap at the base of the Echo Cliffs to around Chambers east of Petrified Forest National Park. This project area is located in the northwestern portion of the Painted Desert, north, east and southeast of Cameron. It is drained by Hamblin and Moenkopi Washes and the Little Colorado River. In this area the resistant sandstone and conglomerate of the Shinarump Member and silt- and mudstone of the Petrified Forest Member are exposed; the former as ledges, scarps, and bedrock surfaces, the latter as badlands. Sediments for the area are either residual or fluvial and vary with the parent material; they range from clay to cobbles and are most often poorly sorted.

The project areas range in elevation from a low 4100 feet (1250 m) for two areas located next to the Little Colorado River to a high of 4600 feet (1402 m) for an area next to Hamblin Wash. The plant community is Great Basin Desertscrub and consists of shadscale, ephedra, prickly pear, rabbitbrush,

mustard, snakeweed, yucca, and sparse grasses. Animal life is limited in number and kind, and these days the most visible animals of the area are domestic livestock. Besides the Little Colorado River, surface water is in short supply.

PREVIOUS RESEARCH AND CULTURE HISTORY

No extensive archaeological research has been conducted in the vicinity of the reclamation project areas. Small scale surveys have been conducted around Cameron in advance of developments--roads, water lines, power lines, gravel pits and the like--but these have shed little light on the culture history of the area. Perhaps the most significant work conducted in the general region around Cameron includes the Wupatki Survey (Anderson 1990), excavations at the New Leba 17 site (Breternitz and Schley 1962), excavations along the Four Corners Pipeline (Brugge, Bliss, and Crabtree n.d.), and the excavation of Ariz. I:3:1 along the Black Mesa Pipeline (Ward 1976).

A check of site and project files at NNHPD and NNAD revealed that on the Shadow Mountain Well Quad one project (NTM 89-211) had been undertaken within 1 kilometer of the project area. One site, AZ-K-60-1, was recorded as part of that project, but the site lies some 2km south of the present study area. No previous projects have been undertaken within 1 kilometer of the present project areas on either the Cameron North or Cameron SE Quads, nor have any sites been recorded within 1 kilometer of the project areas.

FIELD METHODS

In late April, 1991, Phil Geib of NNAD-NAU was taken to each of the six project areas by AMLRD Mining Engineer John O'Brien. O'Brien explained the nature of the proposed undertaking in detail. Field work was conducted May 13

and 14, 1991 by Geib and Miranda Warburton, Office Manager of NNAD-NAU. Prior to conducting the fieldwork Grace Morgan-Long of NNAD-NAU had assembled assorted notes and other information about the uranium mines and had interviewed several individuals who had lived in the Cameron area or who had personal knowledge about mining operations.

The goal of reclaiming abandoned mines virtually insures that cultural resources will be encountered, since every project area proposed for reclamation is perforce an archaeological site. The six project areas qualify as sites because they contain evidence of historic mining. Since each of the reclamation project areas is centered on some form of significant prospecting or mining feature or features, the fieldwork was essentially one of documentation rather than survey per se. The boundaries of each of the six reclamation project areas as staked by AMLRD were treated as the boundaries for the six archaeological sites. Fieldwork consisted of mapping and recording all remains contained within these boundaries.

AMLRD produced detailed topographic maps for each of the six project areas. These were used to locate features and other finds and served as base maps for the preparation of site maps. During the mapping and recording process the entire surface of each project area was inspected, or in effect surveyed. In all cases the vast majority of each project area (over 90%) consists of a mine pit surrounded by waste piles. Notes on each site were made in the field and later incorporated onto NNAD site forms.

An important source of information about the mining activity in the area came from geologic and mine inspector reports. These were used to abstract a general history of uranium mining in the region and how specific mines were operated. This information is included in the site forms in Appendix A, and below in the Cultural Resource Findings section.

CULTURAL RESOURCE FINDINGS

Sites

The only archaeological sites documented during this survey are the six reclamation project areas. The only remains of cultural activity that were observed were from mining and later use of the mine pits as land fills.

AZ-K-60-3 (Figure 5a & 5b)

AMLRD Project Area: 5 a & b

Mining Claim: Henry Sloan No. 1

Site Type: Uranium ore open pit mine

USGS Map Reference: Shadow Mtn. Well, Arizona, 7.5 min, 1982

UTM Coordinates: Mine Pit A center = 3995520N, 464220E

Mine Pit B center = 3995250N, 464220E

Site Size: A = ca. 170m W-E x 152m, B= ca. 110m NW-SE x 55m; 31,890 sq m

Site Description: This site consists of two adjacent small open pit mines cut into the Petrified Forest Member of the Chinle Formation. Owing to the Echo Cliffs Anticline the horizontally laid Chinle sediments dip eastward and the topography slopes east towards Hamblin Wash. Mine pit A is the largest of the two and consists of an L-shaped bulldozer broadside into a sandstone capped low scarp of siltstone. There is minor bulldozer disturbance above the mine pit. The cut measures about 25m wide and up to 12m deep, with its N-S arm being about 75m long while its E-W arm is about 60m long. Waste rock was pushed to the east and south filling small gullies. There are no historic structures or artifacts associated with this mine pit.

Mine pit B consists of a linear cut about 36m long, 6m wide and 1m deep. Waste rock was piled to either side of this shallow trench, but mostly to the east. A single mineralized log was extracted from this pit. As with Pit A,

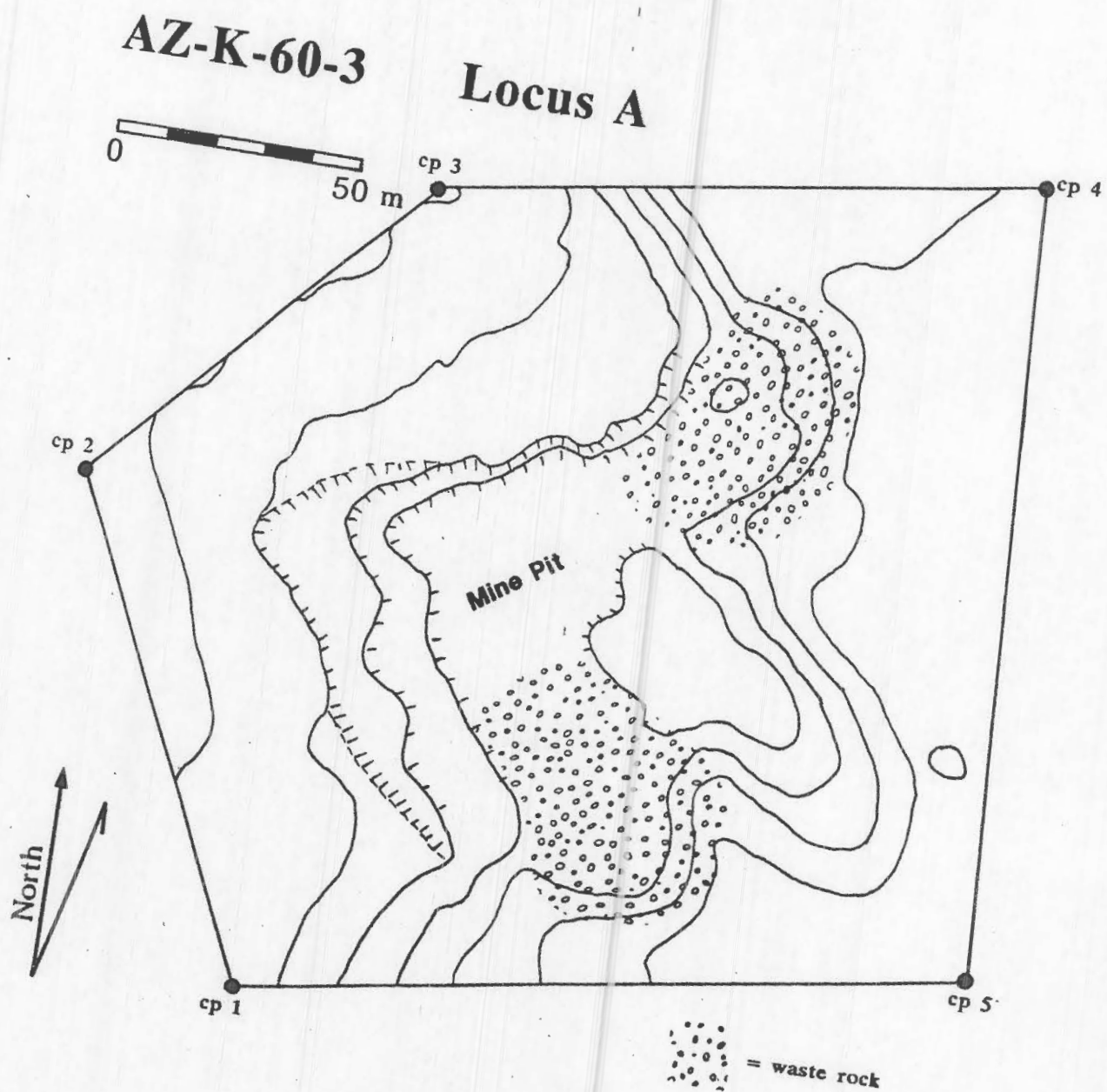
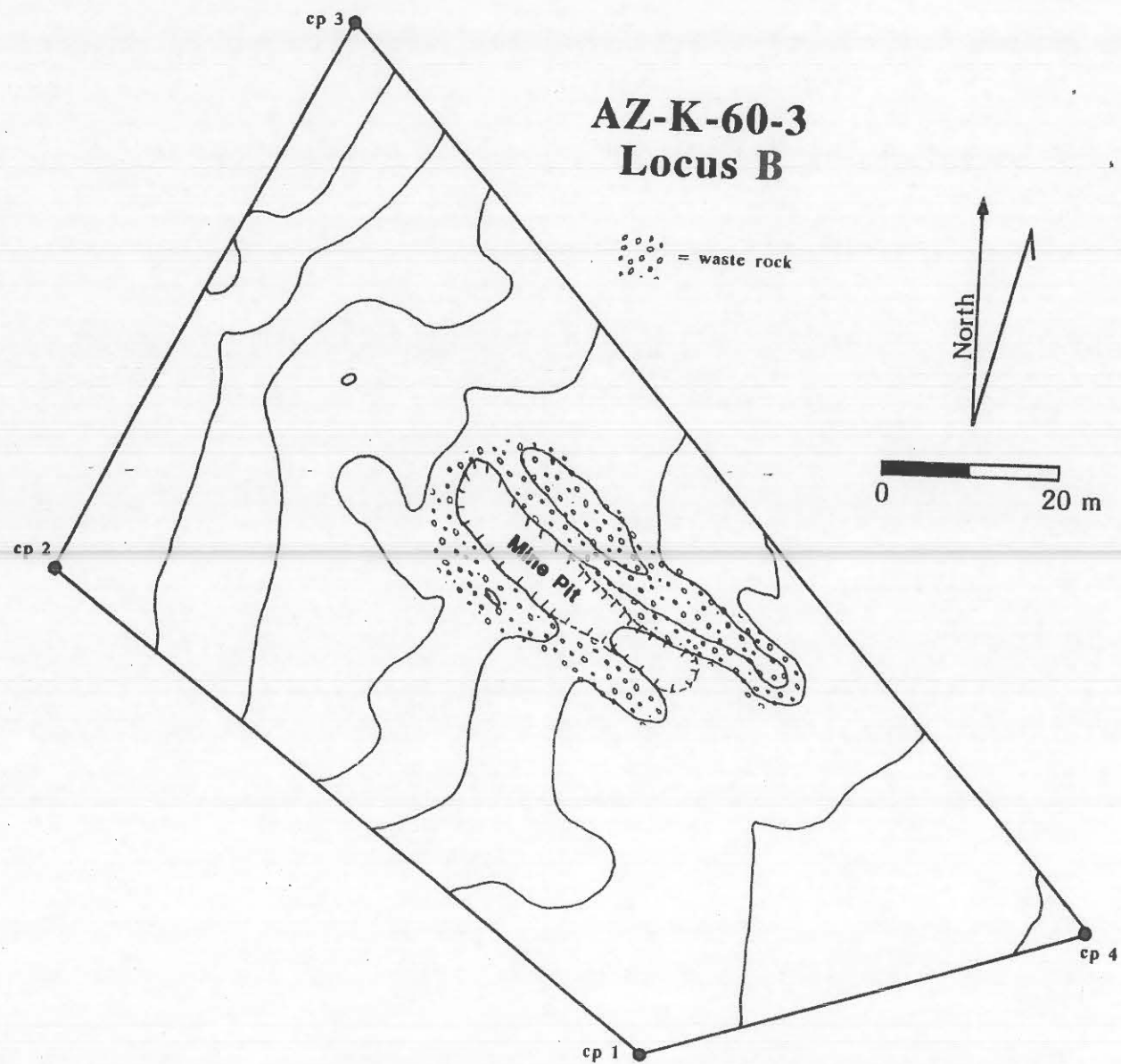


Figure 5a. Map Illustrating Site AZ-K-60-3 (AMLRD Project Area 5) Locus A.

Figure 5b. Map Illustrating Site AZ-K-60-3 (AMLRD Project Area 5) Locus B.



no historic artifacts or structures are associated with Pit B. Scarborough (1981) reports that 353 tons of ore were produced from these two pits.

AZ-N-5-1 (Figure 6)

AML Project Area: 13

Mining Claim: Jeepster No. 1, (Mining Permit No. 347)

Site Type: Uranium ore open pit mine

USGS Map Reference: Cameron North, Arizona, 7.5 min, 1988 provisional edition

<u>UTM Coordinates</u> :	CP1: 3977240N, 463850E
	CP2: 3977400N, 463810E
	CP3: 3977670N, 463830E
	CP4: 3977720N, 463930E
	CP5: 3977420N, 463950E
	CP6: 3977390N, 463980E
	CP7: 3977300N, 463970E

Site Size: ca. 440m NW-SE x 160m; 70,400 sq m

Site Description: This site consists of a long deep open pit mine in the Petrified Forest Member of the Chinle Formation. The cut is oriented N-S, and expands toward the north, the end opposite the ramp access to the pit. The pit measures about 210m long, 55m wide at its widest, and up to 9m deep. This pit holds water for much of the year and local livestock use it for drinking purposes. A now considerably eroded ramp provided access to the pit from its south side. Directly south of the ramp access there is a large eroded pile of waste rock covering an area approximately 170m in diameter and rising about 6m above the ground surface. Immediately west of the ramp access there is a area roughly 60m in diameter that is covered by low small piles of

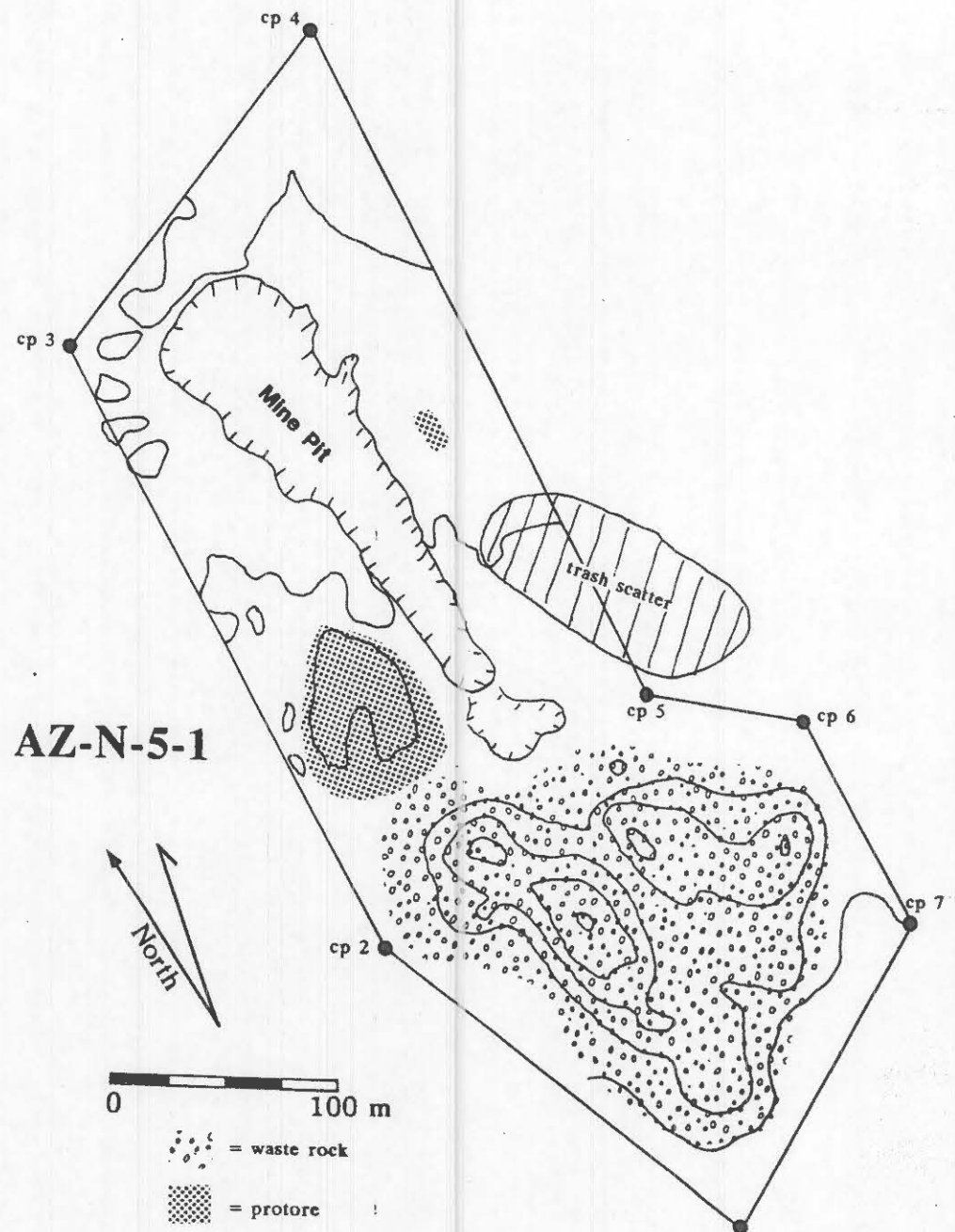


Figure 6. Map Illustrating AZ-N-5-1 (AMLRD Project Area 13).

protore. Two linear piles of protore each about 14m long and 2m wide are located east of the central portion of the mine pit. There is a diffuse scatter of historic trash from the mining operation located immediately east of the ramp access. This trash scatter covers an area of roughly 50m by 20m and includes oil cans, a wooden box that contained "1000 No. 6 Hercules Blasting Caps", scrap metal from welding, welding rods, steel cable from scrapers and dozers, machine and engine parts such as oil filters, piston rings, a leaf spring, bolts, etc., soda bottles ("Kist Orange" and "7-Up"), wine bottle fragments, beer and soda cans, and a jacket. Most of the cans are squashed flat. Some of the beverage containers in the site area are clearly derived from travelers on the adjacent US Highway 89. The trash scatter appears to be where machinery was parked and worked upon.

A report by Chas M. McConnell dated May 29, 1957 mentions that mining operations on the Jeepster No. 1 claim were conducted by the Santa Fe Western Uranium Company of Albuquerque, New Mexico, with Carl Adair in charge. The ore from this pit came from sandstone and measured up to 6 feet thick. In a later correspondence dated September 10, 1959 Mr. McConnell mentions that "there has been no production from this mine [Jeepster No. 1] since March 1957." Scarborough (1981) reports that 1,128 tons of ore were extracted from this large mine pit.

AZ-N-5-2 (Figure 7)

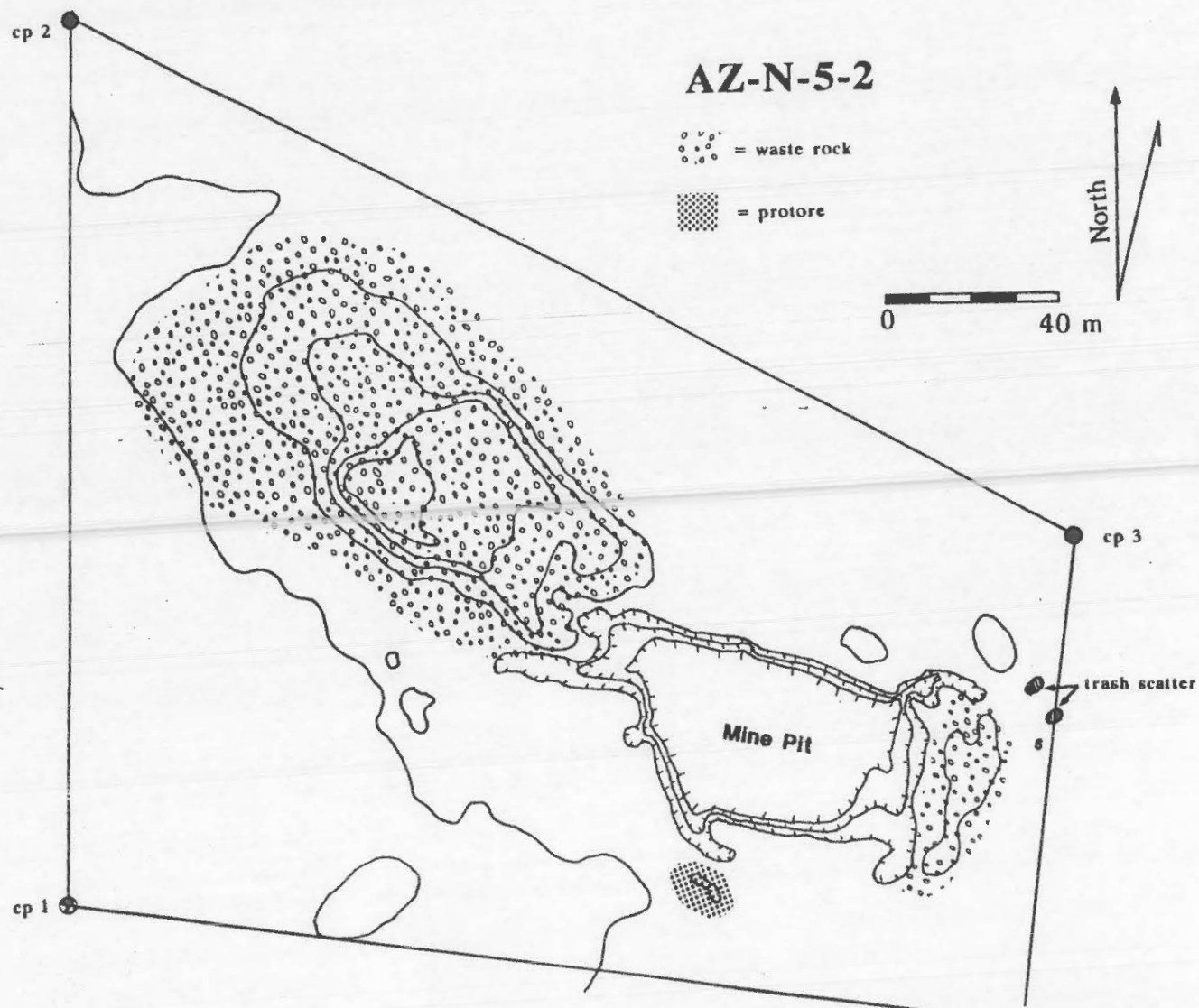
AMLRD Project Area: 23

Mining Claim: Charles Huskon No. 19 (Mine Permit 461)

Site Type: Uranium ore open pit mine

USGS Map Reference: Cameron North, Arizona, 7.5 min, 1988 provisional edition

Figure 7. Map illustrating AZ-N-5-2 (AMLRD Project Area 23).



UTM Coordinates:

CP1: 3973640N, 464040E

CP2: 3973840N, 464040E

CP3: 3973720N, 464260E

CP4: 3973610N, 464240E

Site Size: ca. 220m E-W x 146m; 32,120 sq m

Site Description: This site consists of a sub-rectangular pit about 60 x 42m in size and 5m deep. Waste rock was pushed out of the NW corner of the pit forming a pile about 100 x 60m with a maximum height of about 6m. All mining was apparently done by bulldozer. A few small piles of protore occur south and west of the pit and there is a small pile of waste rock immediately to the east. In an erosional channel at the SW corner of the pit there is a small 1970s-1980s trash dump of wine bottles and cans. In a small channel feeding into the pit from the east there is another, slightly larger 1970s-1980s trash dump plus a similar trash dump on the ground surface slightly further east. These dumps contain about 100 or so all aluminum cans, 20 or so beverage bottles ("Coca Cola", cheap wine, etc.), styrofoam cups, some car parts, and other miscellaneous household trash. There is an historic collector's pile of prehistoric sherds immediately east of the mine pit: a Black Mesa B/W bowl sherd, a Sosi B/W bowl sherd, 4 untypeable Tusayan White Ware sherds, a San Juan Red Ware jar sherd, and a Tusayan Corrugated jar sherd. These sherds occurred in a 40 cm diameter area; no other prehistoric remains were observed. A health and safety inspection report by Derzay et al. (1959) reveals that this mine (Charles Huskon No. 19) was operated by the Cameron Mining Company, (Page Blakemore President) of Cameron, Arizona, for Utco Uranium Company (George Casey President) of Denver, Colorado. The report states that:

Mining operations were performed by a crew of about 20 men, including a foreman and Mr. Blakemore. Principal equipment used included track mounted front end loaders, truck mounted wagon drills and compressors, diesel-powered and gasoline-powered portable compressor, 3-ton capacity dump trucks and jackhammers. The men were generally divided into operating crews each performing a specific task, such as drilling or loading. As each crew completed its assignment at one mine it moved on to the next. Thus, while optimum efficiency was derived from use of equipment and men, the operation of any particular mine was sporadic. Production, therefore, varied from 0 to about 1000 tons per month per mine.

An earlier mine inspection report by Chas McConnell (April 9, 1958) mentions that the ore zone of this pit is about 5 feet thick and very low grade. McConnell states that there has been no production at the mine since October 1957. Scarborough (1981) reports that 696 tons of ore were recovered from this pit.

AZ-N-5-3 (Figure 8)

AMLRD Project Area: 25

Mining Claim: Charles Huskon No. 12 (Mining Permit No. 107 and Mining Lease No. 14-20-603-4212)

Site Type: Uranium ore open pit mine

USGS Map Reference: Cameron North, Arizona, 7.5 min, 1988 provisional edition

<u>UTM Coordinates</u> :	CP1: 3971800N, 462200E
	CP2: 3971940N, 462160E
	CP3: 3972040N, 462310E
	CP4: 3971880N, 462340E

Site Size: ca. 174m SW-NE x 136m; 23,664 sq m

Site Description: This site consists of a horseshoe-shaped open pit cut into the Shinarump Member of the Chinle Formation. The pit is shaped as it is

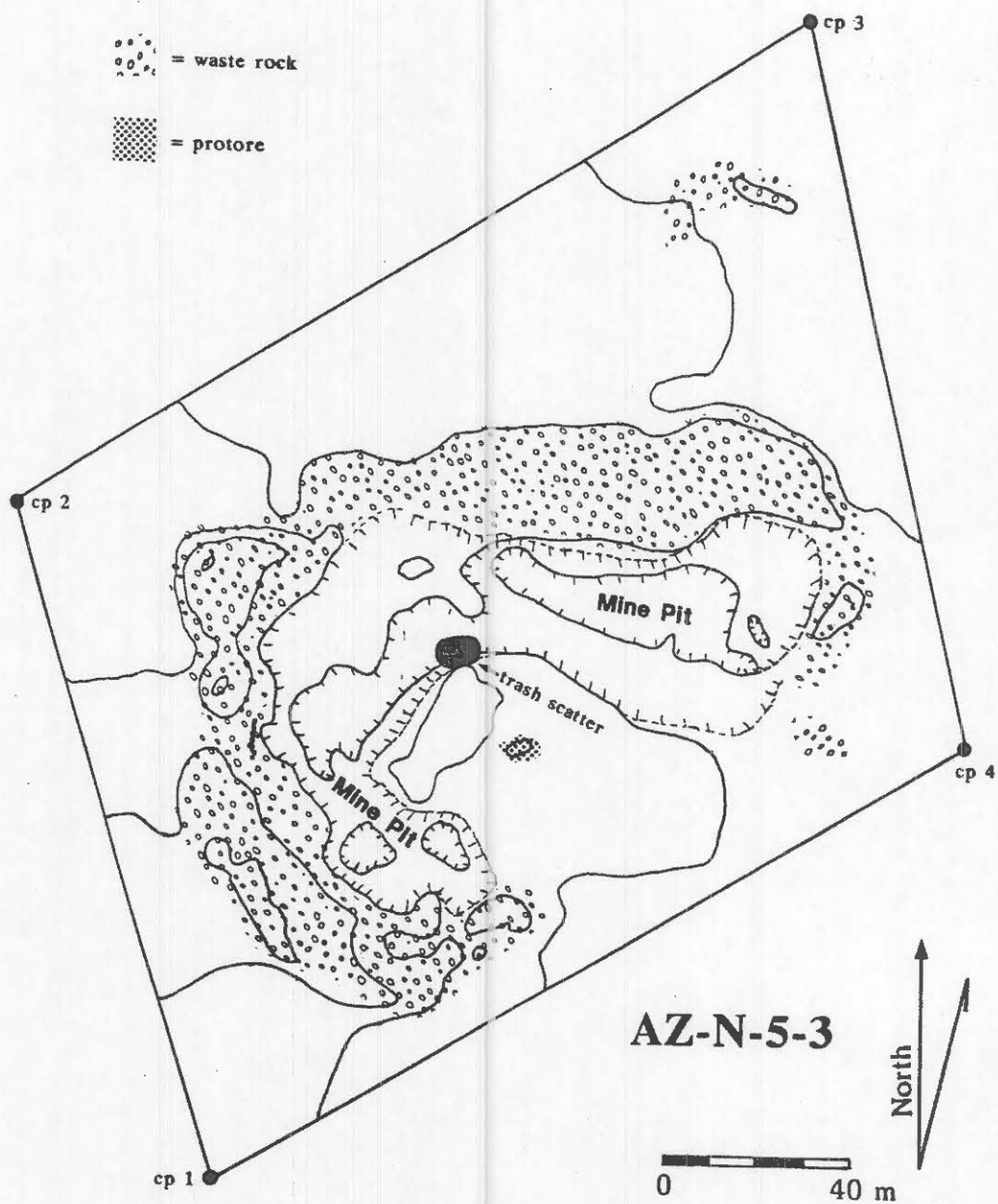


Figure 8. Map Illustrating AZ-N-5-3 (AMLRD Project Area 25).

because the miners were apparently extracting ore from an ancient stream meander. The cut measures about 140m long, up to 20m wide, and 3m in maximum depth. The hard sandstone was blasted to break it up and then the waste was pushed with bulldozers to the west and north, creating an arc-shaped pile of rock that reaches a maximum height of 4.5m. There is a small protore pile near the central portion of the site area. Scattered around this same area are squished oil cans and filters, a 5 gallon gas/kerosene can, and a few juice cans. Near the central portion of the mine pit there is a recent (1960s-1970s) trash dump roughly 10m in diameter. It contains about 200 bimetal soda cans ("Pepsi", "7-Up", orange), an old wooden chair, a car muffler and other car parts, an enamel wash basin, soda and wine bottles, milk cans, various sized fruit/vegetable cans, wood and bone scraps, bedsprings, a child's cowboy boot, ash and charcoal, and other household trash. The Huskon No. 12 mine was one of a dozen or more pit uranium mines operated by the Rare Metals Corporation of America in the Cameron area during the late 1950s and early 1960s. An inspection report by McConnell (October 14, 1958) for properties being operated by Rare Metals Corporation mentions that:

"The Huskon No. 12 mine which has heretofore been a small handmining operation has been developed into a larger mine using a compressor and loader. The ore occurs just under the surface of the ground in laminated sandstone and since production was resumed in May 1958 the ore has been found to extend over a much larger area and is much thicker."

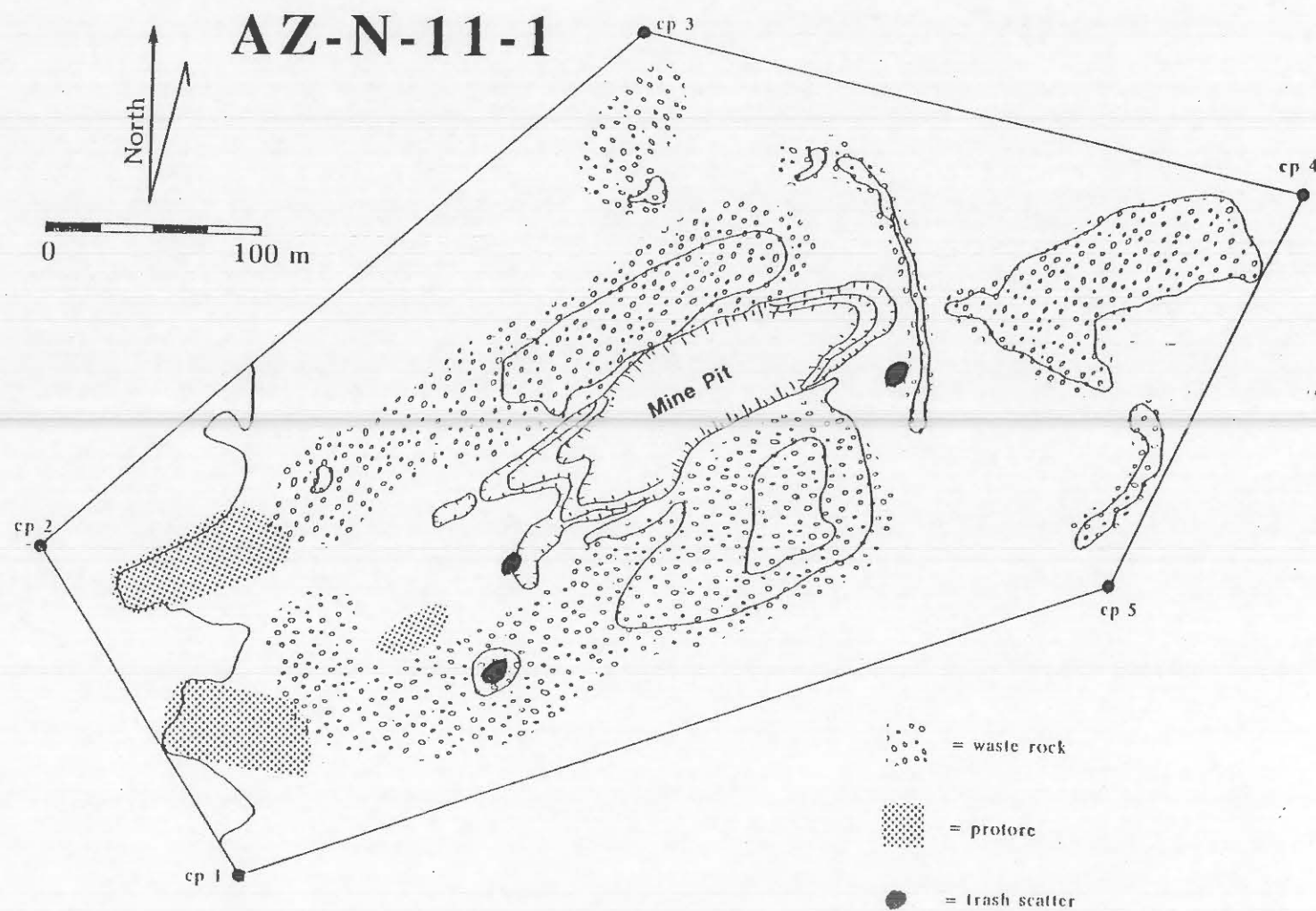
Scarborough (1981) reports that 1,780 tons of ore were produced from the Huskon No. 12 mine.

AZ-N-11-1 (Figure 9)

AMLRD Project Area: 41

Mining Claim: Juan Horse No. 4 (Mining Permit No. 449)

Figure 9. Map Illustrating AZ-N-11-1 (ANLRD Project Area 41).



Site Type: Uranium ore open pit mine

USGS Map Reference: Cameron SE, Arizona, 7.5 min, 1988 provisional

edition

UTM Coordinates: CP1: 3964060N, 469820E

CP2: 3964320N, 469800E

CP3: 3964440N, 469860E

CP4: 3964480N, 470000E

CP5: 3964340N, 470130E

CP6: 3964130N, 470150E

Site Size: ca. 480m SW-NE x 270m; 129,600 sq m

Site Description: This site consists of a linear mine pit oriented SW-NE with ramp access at both ends. The pit measures about 170m long, 40m wide and a maximum of 15m deep. It is filled with water, (which it apparently holds year round.) ^{NO, dry now 8/29/91} On either side of the pit are linear waste rock piles, one about 300m long, 40m wide and 4m high and the other 240m long, up to 70m wide, and 5m high. The morphology of the mine pit and its waste rock piles clearly reveal that the mining was performed for the most part by scrapers. There are two protore piles on either side of the access route to the mine site, which comes in from the Southwest. There are some berms of earth along the east side of the site that apparently served to keep runoff from flooding the pit.

Scattered near the southwest ramp entrance to the open pit are squashed oil cans and filters, welding debris, engine parts and other debris. As at the large open pit of site AZ-N-5-1, this area seems to have been where heavy equipment was maintained. On top of the waste rock pile south of the southwest access ramp to the pit there is a scatter of food and beverage cans--apparently some workers took lunch breaks on top of this rise. The cans in this area include round potted meat tins, sardine tins, and juice cans. Near

the northeast ramp access to the mine pit there is a scatter of about 20 cans including several 16 oz beer cans ("Budweiser"), some juice cans, and a milk can, plus a "Kist" soda bottle. In an erosional channel of the southwest ramp access to the pit there is a 1970s-1980s trash dump of about 100 all aluminum cans, soda bottles with aluminum screw tops, wine bottles and other glass fragments, ash and charcoal, and other household trash.

(AZ-N-11-2 (Figure 10))

AMLRD Project Area: 48

Mining Claim: Jack Huskon No. 3

Site Type: Uranium ore open pit mine

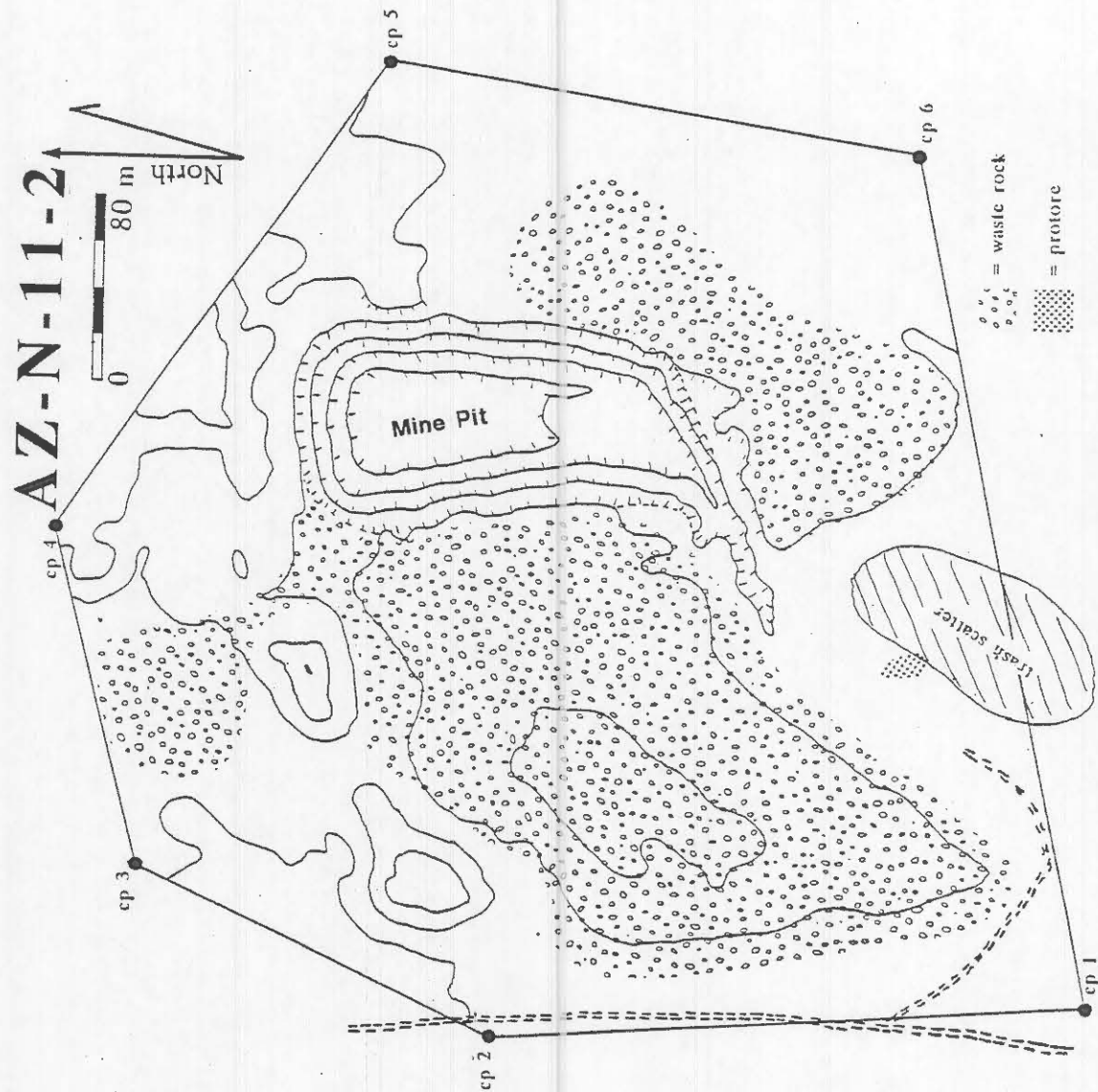
USGS Map Reference: Cameron SE, Arizona, 7.5 min, 1988 provisional edition

<u>UTM Coordinates</u> :	CP1: 3967530N, 467310E
	CP2: 3967670N, 467210E
	CP3: 3967910N, 467470E
	CP4: 3967840N, 467760E
	CP5: 3967660N, 467680E

Site Size: ca. 400m W-E x 375m; 150,000 sq m

Site Description: This site consists of a 25m deep mine pit that is 170m long and 82m wide. The pit has a curved access ramp into its southwest corner. Most of the waste rock was dumped in a massive pile west of the pit that covers an area roughly 200 x 140m in size and reaches a height of 9m. Some additional waste rock was pushed out to the northwest and covers an area roughly 60m x 40m with a maximum height of about 5m above the ground surface. The morphology of the mine pit and waste piles reveals that both scrapers and dozers were involved in the operation.

Figure 10. Map Illustrating AZ-N-11-2 (ANLRD Project Area 48).



As with the other large open pit mines, there is a scatter of oil cans, oil filters, welding debris, machine parts, bottles ("Coke") and fragments thereof, drill bits and other trash near the access ramp to the pit. This seem to have been a maintenance area for the equipment and an area for lunch breaks. At the south end of this trash scatter there is a trash concentration of about 15 cans (juice, fruit/vegetable, meat, coffee) a mason jar, an antihistamine bottle and a July 8, 1958 "Republic and Gazette" newspaper. One interesting find was a 12 volt battery embedded into the siltstone on the east rim of the mine pit; perhaps it was used in blasting.

SACRED PLACES

In order to determine the possibility of Traditional Cultural Properties that might be affected by the proposed construction, Grace Morgan-Long of the Navajo Nation Archaeology Department - NAU Branch Office met with Cameron Chapter Officials and local residents on June 17. At this time a letter and a copy of the maps showing the project areas were distributed to the Chapter Officials who said they would post the letter and mention the project at the next Chapter meeting on June 23, 1991. Morgan-Long met with Ace Charlie, the Chapter President, and Dugi Charlie, the Chapter Manager; neither of these men were aware of any sacred/ceremonial places, burials, prehistoric sites, or plant or mineral gathering areas that might be located close to the uranium pits.

In an effort to acquire further information Morgan-Long drove around and visited the homes closest to the project areas. Twenty-six residences were visited and representatives of 10 different families were interviewed in Navajo. None of the interviewees expressed any knowledge of or concern about Traditional Cultural Properties near the uranium pits. Many respondents said

that they were Christians and did not care about TCPs, others said that there were none around. Residents expressed their concern and desire to see the pits filled in, one person referred to the area as the "Navajo Killing Field," another person noted that they were of "no use, nothing worth using around the mines, please cover them."

After the interviews were conducted, Morgan-Long again contacted the Chapter Officials to see if they had gotten any additional word from other residents. The response was negative and they reiterated that the sooner the pits were filled in, the happier and healthier they would all be.

Kurt Dongoske, archaeologist with the Hopi Tribe was also contacted about possible Hopi concerns for TCPs in the project area. Dongoske consulted with representatives of the Hopi Tribe and they were unaware of any Hopi TCPs within a kilometer of the project areas.

Finally, while Morgan-Long was interviewing local residents she found a small group of San Juan Southern Paiutes living over a kilometer away from AZ-K-60-3 (AMLRD Project Area 5) who expressed concern over the sumac bushes that they used for baskets. Morgan-Long spoke with Johnny Lehi (Vice-President) and Evelyn James (President), neither was willing to commit themselves to supporting the proposed reclamation nor would they state that they were against it. NNAD-NAU wrote them a letter describing the proposed project and included maps of the project areas with a request to respond by July 5, 1991. When no response was received, repeated calls were made to the President who declined to answer, but said they thought they would soon be ready write us a letter. Given the unwillingness of the San Juan Paiutes to respond and that these plants are readily available outside the pits themselves, it does not appear that their concerns are specifically related to TCPs, but perhaps other matters of a more political nature.

CURRENTLY OCCUPIED/USED STRUCTURES & FEATURES

No currently occupied or used structures or features occur in or in close proximity to any of the AML reclamation areas.

SIGNIFICANCE EVALUATIONS

Each of the six archaeological sites recorded during this project were evaluated for eligibility to the National Register of Historic Places (NRHP) and for protection under of the Archaeological Resource Protection Act (ARPA) and the American Indian Religious Freedom Act (AIRFA). None of the sites are eligible to the National Register under any criteria and all are less than 50 years old. Lacking scientific interest and being less than 100 years old, none of the six sites are protected under ARPA. Furthermore, none of the sites qualify for protection under AIRFA.

RECOMMENDATIONS

The proposed reclamation work will not effect significant cultural resources. The uranium ore mine sites are not eligible for nomination to the National Register and do no warrant protection under any other legislation. In order to give the San Juan Paiutes more time to respond, we recommend that the project proceed, but that area AZ-K-60-3 (AMLRD Project Area 5) be reclaimed last thereby allowing the San Juan Southern Paiutes more time for comment.